

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-3 (Canceled)

4. (Currently amended) The process of Claim 4 31 including providing a free radical scavenger to said cyclotetrasiloxane.

5. (Original) The process of Claim 4 wherein said free radical scavenger is selected from the group consisting of: 2,6-di-tert-butyl-4-methyl phenol, 2,2,6,6-tetramethyl-1-piperidinyloxy, 2-tert-butyl-4-hydroxyanisole, 3-tert-butyl-4-hydroxyanisole, propyl ester 3,4,5-trihydroxy-benzoic acid, 2-(1,1-dimethylethyl)-1,4-benzenediol, diphenylpicrylhydrazyl, 4-tert-butylcatechol, N-methylaniline, p-methoxydiphenylamine, diphenylamine, N,N'-diphenyl-p-phenylenediamine, p-hydroxydiphenylamine, phenol, octadecyl-3-(3,5-di-tert-butyl-4-hydroxyphenyl) propionate, tetrakis (methylene (3,5-di-tert-butyl)-4-hydroxy-hydrocinnamate) methane, phenothiazines, alkylamidonoisoureas, thiodiethylene bis (3,5-di-tert-butyl-4-hydroxy-hydrocinnamate, 1,2,-bis (3,5-di-tert-butyl-4-hydroxyhydrocinnamoyl) hydrazine, tris (2-methyl-4-hydroxy-5-tert-butylphenyl) butane, cyclic neopentanetetrayl bis (octadecyl phosphite), 4,4'-thiobis (6-tert-butyl-m-cresol), 2,2'-methylenebis (6-tert-butyl-p-cresol), oxalyl bis (benzylidenehydrazide) and mixtures thereof.

6. (Original) The process of Claim 5 wherein said 2,6-di-tert-butyl-4-methyl phenol is provided in an amount of 50-500 ppm (vol.).

7. (Original) The process of Claim 5 wherein said 2,2,6,6-tetramethyl-1-piperidinyloxy is provided in an amount of 50-230 ppm (vol.).

Claims 8-11 (Canceled)

12. (Currently amended) The process of Claim 44 33 wherein said free radical scavenger is selected from the group consisting of 2,6-di-tert-butyl-4-methyl phenol, 2,2,6,6-tetramethyl-1-piperidinyloxy and mixtures thereof.

13. (Original) The process of Claim 12 wherein said scavenger is provided in an amount of 50-500 ppm (vol.).

14. (Original) The process of Claim 12 wherein said 2,2,6,6-tetramethyl-1-piperidinyloxy is provided in an amount of 50-230 ppm (vol.).

15. (Original) A process for stabilizing 1,3,5,7-tetramethylcyclotetrasiloxane against polymerization used in a chemical vapor deposition process for silicon oxides in electronic material fabrication comprising providing a neutral to weakly acidic polymerization inhibitor to said 1,3,5,7-tetramethylcyclotetrasiloxane and providing a free radical scavenger to said 1,3,5,7-tetramethylcyclotetrasiloxane.

16. (Original) The process of Claim 15 wherein said inhibitor is selected from the group consisting of 2,4-pentanedione, 1-hexanoic acid, glycerol, acetic anhydride, less than 1% (vol.) 1,1,1,5,5,5-hexamethyltrisiloxane and mixtures thereof.

17. (Original) The process of Claim 15 wherein said free radical scavenger is selected from the group consisting of 2,6-di-tert-butyl-4-methyl phenol, 2,2,6,6-tetramethyl-1-piperidinyloxy and mixtures thereof.

Claims 18-19 (Canceled)

20. (Original) A composition of 1,3,5,7-tetramethylcyclotetrasiloxane, used in a chemical vapor deposition process as a precursor for silicon oxides in electronic material fabrication, stabilized against polymerization, comprising 1,3,5,7-tetramethylcyclotetrasiloxane and a neutral to weakly acidic polymerization inhibitor and a free radical scavenger.

21. (Original) A composition of 1,3,5,7-tetramethylcyclotetrasiloxane, used in a chemical vapor deposition process as a precursor for silicon oxides in electronic material fabrication, stabilized against polymerization, comprising (a) 1,3,5,7-tetramethylcyclotetrasiloxane, (b) a neutral to weakly acidic polymerization inhibitor selected from the group consisting of 2,4-pentanedione; 1-hexanoic acid; glycerol; acetic anhydride; less than 1% (vol.) 1,1,1,5,5,5-hexamethyltrisiloxane; less than 1% (vol.) 1,1,1,3,5,5,5-heptamethyltrisiloxane; β -diketones $RC(O)CH_2C(O)R$; aliphatic carboxylic acids $RCOOH$; aliphatic dicarboxylic acids $HOOC-(CH_2)_n-COOH$ in which $1 \leq n \leq 8$; phenols $C_6R_{(6-n)}(OH)_n$ in which $1 \leq n \leq 5$; polyols $CH_2X(CHX)_nCH_2X$, in which $X = H$ or OH but at least one $X = OH$ and $1 \leq n \leq 8$; anhydrides $RCH_2-C(O)-O-C(O)-CH_2R$; hydrosiloxanes $R_3Si-(O-SiR_2)_n-OSiR_3$, in which $0 \leq n \leq 8$, all wherein R is individually selected from the group consisting of hydrogen, normal, branched or cyclic C_{1-10} alkyl groups; and mixtures thereof, and (c) a free radical scavenger selected from the group consisting of 2,6-di-tert-butyl-4-methyl phenol, 2,2,6,6-tetramethyl-1-piperidinyloxy, 2-tert-butyl-4-hydroxyanisole, 3-tert-butyl-4-hydroxyanisole, propyl ester 3,4,5-trihydroxy-benzoic acid, 2-(1,1-dimethylethyl)-1,4-benzenediol, diphenylpicrylhydrazyl, 4-tert-butylcatechol, N-methylaniline, p-methoxydiphenylamine, diphenylamine, N,N'-diphenyl-p-phenylenediamine, p-hydroxydiphenylamine, phenol, octadecyl-3-(3,5-di-tert-butyl-4-hydroxyphenyl) propionate, tetrakis (methylene (3,5-di-tert-butyl)-4-hydroxy-hydrocinnamate) methane, phenothiazines, alkylamidonoisoureas, thiodiethylene bis (3,5-di-tert-butyl-4-hydroxy-hydrocinnamate, 1,2-bis (3,5-di-tert-butyl-4-hydroxyhydrocinnamoyl) hydrazine, tris (2-methyl-4-hydroxy-5-tert-butylphenyl) butane, cyclic neopentantetrayl bis (octadecyl phosphite), 4,4'-thiobis (6-tert-butyl-m-cresol), 2,2'-methylenebis (6-tert-butyl-p-cresol), oxalyl bis (benzylidenehydrazide) and mixtures thereof.

22. (Original) A composition of 1,3,5,7-tetramethylcyclotetrasiloxane, used in a chemical vapor deposition process as a precursor for silicon oxides in electronic material fabrication, stabilized against polymerization, comprising 1,3,5,7-tetramethylcyclotetrasiloxane, and 2,4-pentanedione.

23. (Original) A composition of 1,3,5,7-tetramethylcyclotetrasiloxane, used in a chemical vapor deposition process as a precursor for silicon oxides in electronic material

fabrication, stabilized against polymerization, comprising 1,3,5,7-tetramethylcyclotetrasiloxane, and 1-hexanoic acid.

Claim 24 (Cancelled)

25. (Original) A composition of 1,3,5,7-tetramethylcyclotetrasiloxane, used in a chemical vapor deposition process as a precursor for silicon oxides in electronic material fabrication, stabilized against polymerization, comprising 1,3,5,7-tetramethylcyclotetrasiloxane, and glycerol.

26. (Original) A composition of 1,3,5,7-tetramethylcyclotetrasiloxane, used in a chemical vapor deposition process as a precursor for silicon oxides in electronic material fabrication, stabilized against polymerization, comprising 1,3,5,7-tetramethylcyclotetrasiloxane, and acetic anhydride.

27. (Original) A composition of 1,3,5,7-tetramethylcyclotetrasiloxane, used in a chemical vapor deposition process as a precursor for silicon oxides in electronic material fabrication, stabilized against polymerization, comprising 1,3,5,7-tetramethylcyclotetrasiloxane, 2,4-pentanedione and a free radical scavenger selected from the group consisting of 2,6-di-tert-butyl-4-methyl phenol, 2,2,6,6-tetramethyl-1-piperidinyloxy and mixtures thereof.

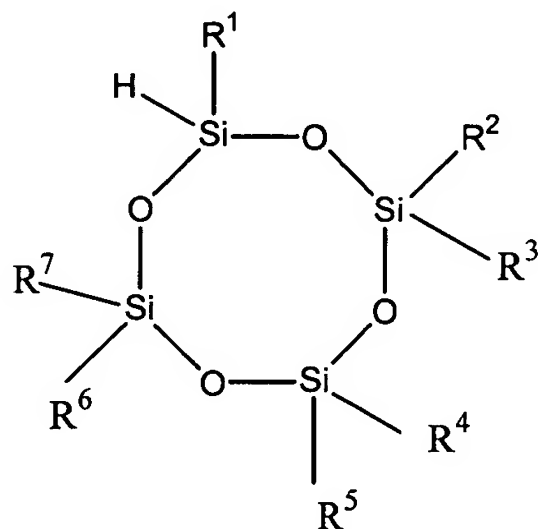
28. (Original) A composition of 1,3,5,7-tetramethylcyclotetrasiloxane, used in a chemical vapor deposition process as a precursor for silicon oxides in electronic material fabrication, stabilized against polymerization, comprising 1,3,5,7-tetramethylcyclotetrasiloxane, 1-hexanoic acid and a free radical scavenger selected from the group consisting of 2,6-di-tert-butyl-4-methyl phenol, 2,2,6,6-tetramethyl-1-piperidinyloxy and mixtures thereof.

29. (Original) A composition of 1,3,5,7-tetramethylcyclotetrasiloxane, used in a chemical vapor deposition process as a precursor for silicon oxides in electronic material fabrication, stabilized against polymerization, comprising 1,3,5,7-

tetramethylcyclotetrasiloxane, glycerol and a free radical scavenger selected from the group consisting of 2,6-di-tert-butyl-4-methyl phenol, 2,2,6,6-tetramethyl-1-piperidinyloxy and mixtures thereof.

30. (Original) A composition of 1,3,5,7-tetramethylcyclotetrasiloxane, used in a chemical vapor deposition process as a precursor for silicon oxides in electronic material fabrication, stabilized against polymerization, comprising 1,3,5,7-tetramethylcyclotetrasiloxane, acetic anhydride and a free radical scavenger selected from the group consisting of 2,6-di-tert-butyl-4-methyl phenol, 2,2,6,6-tetramethyl-1-piperidinyloxy and mixtures thereof.

31. (New) A process for stabilizing a cyclotetrasiloxane against polymerization, the cyclotetrasiloxane having the following formula:



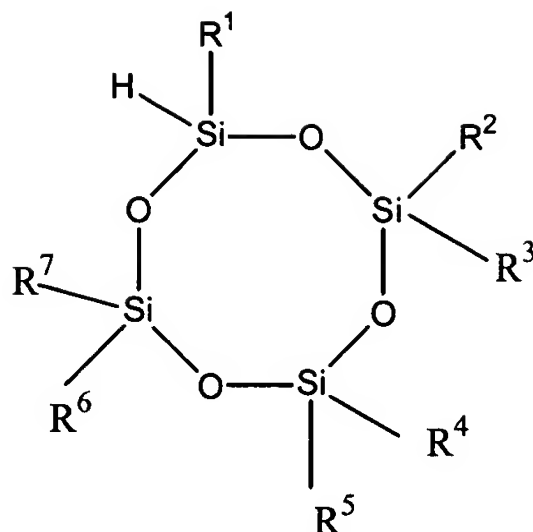
wherein R^{1-7} are individually selected from the group consisting of hydrogen, a normal, branched or cyclic C_{1-10} alkyl group, and a C_{1-4} alkoxy group, the process comprising:

providing an effective amount of an inhibitor to the cyclotetrasiloxane wherein the inhibitor is selected from 2,4-pentanedione; 1-hexanoic acid; glycerol; acetic anhydride; β -diketones $RC(O)CH_2C(O)R$; aliphatic carboxylic acids $RCOOH$; aliphatic dicarboxylic acids $HOOC-(CH_2)_n-COOH$ in which $1 \leq n \leq 8$; phenols $C_6R_{(6-n)}(OH)_n$ in which $1 \leq n \leq 5$; polyols $CH_2X(CHX)_nCH_2X$, in which $X = H$ or OH but at least one $X = OH$ and $1 \leq n \leq 8$; anhydrides $RCH_2-C(O)-O-C(O)-CH_2R$; hydrosiloxanes $R_3Si-(O-SiR_2)_n-OSiR_3$, in which $0 \leq n \leq 8$, all wherein R is individually selected from the group consisting of hydrogen, normal, branched or cyclic C_{1-10} alkyl groups; and mixtures thereof.

32. (New) A composition of 1,3,5,7-tetramethylcyclotetrasiloxane comprising (a) 1,3,5,7-tetramethylcyclotetrasiloxane, (b) a polymerization inhibitor selected from 2,4-pentanedione; 1-hexanoic acid; glycerol; acetic anhydride; β -diketones $RC(O)CH_2C(O)R$; aliphatic carboxylic acids $RCOOH$; aliphatic dicarboxylic acids $HOOC-(CH_2)_n-COOH$ in which $1 \leq n \leq 8$; phenols $C_6R_{(6-n)}(OH)_n$ in which $1 \leq n \leq 5$; polyols $CH_2X(CHX)_nCH_2X$, in which $X = H$ or OH but at least one $X = OH$ and $1 \leq n \leq 8$; anhydrides $RCH_2-C(O)-O-C(O)-CH_2R$; hydrosiloxanes $R_3Si-(O-SiR_2)_n-OSiR_3$, in which $0 \leq n \leq 8$, all wherein R is individually selected from the group consisting of hydrogen, normal, branched or cyclic C_{1-10} alkyl groups; and mixtures thereof, and (c) a free radical scavenger selected from 2,6-di-tert-butyl-4-methyl phenol, 2,2,6,6-tetramethyl-1-piperidinyloxy, 2-tert-butyl-4-hydroxyanisole, 3-tert-butyl-4-hydroxyanisole, propyl ester 3,4,5-trihydroxy-benzoic acid, 2-(1,1-dimethylethyl)-1,4-benzenediol, diphenylpicrylhydrazyl, 4-tert-butylcatechol, N-methylaniline, p-methoxydiphenylamine, diphenylamine, N,N'-diphenyl-p-phenylenediamine, p-hydroxydiphenylamine, phenol, octadecyl-3-(3,5-di-tert-butyl-4-hydroxyphenyl) propionate, tetrakis (methylene (3,5-di-tert-butyl)-4-hydroxy-hydrocinnamate) methane, phenothiazines, alkylamidonoisoureas, thiodiethylene bis (3,5-di-tert-butyl-4-hydroxy-hydrocinnamate, 1,2-bis (3,5-di-tert-butyl-4-hydroxyhydrocinnamoyl) hydrazine, tris (2-methyl-4-hydroxy-5-tert-butylphenyl) butane, cyclic neopentantetrayl bis (octadecyl phosphite), 4,4'-thiobis (6-tert-butyl-m-cresol), 2,2'-methylenebis (6-tert-butyl-p-cresol), oxalyl bis (benzylidenehydrazide) and mixtures thereof.

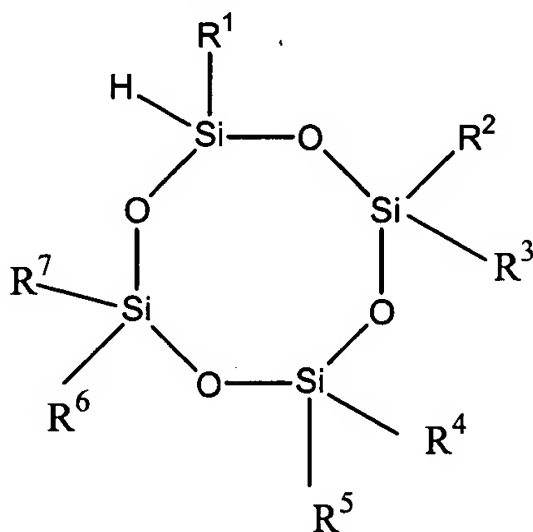
33. (New) A process for stabilizing 1,3,5,7-tetramethylcyclotetrasiloxane against polymerization comprising: providing a free radical scavenger to said 1,3,5,7-tetramethylcyclotetrasiloxane.

34. (New) A composition of a cyclotetrasiloxane, the composition comprising; (a) said cyclotetrasiloxane having the following formula:



where R^{1-7} are individually selected from the group consisting of hydrogen, a normal, branched or cyclic C_{1-10} alkyl group, and a C_{1-4} alkoxy group, (b) a neutral to weakly acidic polymerization inhibitor; and (c) a free radical scavenger.

35. (New) A composition of a cyclotetrasiloxane, the composition comprising; (a) said cyclotetrasiloxane having the following formula:



where R^{1-7} are individually selected from the group consisting of hydrogen, a normal, branched or cyclic C_{1-10} alkyl group, and a C_{1-4} alkoxy group, and (b) a free radical scavenger.

Presentation of New Claims:

In the present office action, new claims 31-35 have been added. Claims 31-35 are being presented at this time to more completely cover a particular aspect of Applicants' invention. Further, it is submitted that new claims 31-35 raise no new issues and do not require the Examiner to conduct an additional search, since the claim merely clarifies the subject matter already presented. Support for claims 31-35 are found, for example, paragraphs [0013], [0014], [0017], and [0019].

Applicants respectfully request that the Examiner enter the above new claims.

Rejection Under 35 U.S.C. §112, ¶ 1:

Claims 3, 10, 16, 21, and 24 are rejected under 35 U.S.C. §112, ¶ 1 because the "[t]he Examiner cannot find support for the limitation "less than 1% (vol.)" in the specification." MPEP § 2163.06 provides that "if an application as originally filed contains a claim disclosing material not disclosed in the remainder of the specification, the applicant may amend the specification to include the claimed subject matter." Accordingly, Applicant as amended the specification at paragraph 18 to include "less than 1 % (vol.)". Withdrawal of the §112, ¶1 rejections is respectfully requested.

Rejections Under 35 U.S.C. §102(b)/ §103(a):

Claims 1, 2, 8, 9, 18, and 19 are rejected under 35 U.S.C. §102(b) "as being anticipated by JP 07-145179." These claims have been canceled herein. Therefore, withdrawal of the §102(b) rejections is respectfully requested.

Claims 3, 10, 21, and 24 are rejected under 35 U.S.C. §102(b) “as being anticipated by, or in the alternative, under §103(a) as obvious in view of JP 07-145179.” Claims 3, 10, and 24 have been canceled herein.

With regard to Claim 21, Applicant traverses the rejection. For a prior art reference to be anticipatory, MPEP § 2131 provides that: “A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described in a single prior art reference.” Contrary to the Examiner’s statement that all elements are disclosed in JP 07-145179, the element “free radical scavenger” is not; the rejection is unsupported by the art and should be withdrawn.

When evaluating a claim for determining obviousness, all limitations of the claim must be evaluated. In this regard, the mere absence from the reference of an explicit requirement of the claim cannot reasonably be construed as an affirmative statement that the requirement is in the reference. *In re Evanega*, 829 F.2d 1110, 4 USPQ2d 1249 (Fed. Cir. 1987).

Moreover, the Examiner in paragraph 6 of Paper 6 states that “[t]he prior art fails to provide adequate motivation to add a free radical scavenger to the composition in ‘179.” Therefore, the rejection of claim 21 under §102(b), or alternatively under §103, in view of JP 07-145179 should be removed.

SUMMARY

For at least the reasons set forth above, it is respectfully submitted that the above-identified application is in condition for allowance. Favorable reconsideration and prompt allowance of the claims are respectfully requested.

Should the Examiner believe that anything further is desirable in order to place the application in even better condition for allowance, the Examiner is invited to contact Applicants' undersigned Attorney at the telephone number listed below.

Respectfully submitted,



Rosaleen P. Morris-Oskanian
Attorney of Record
Reg. No. 47,321

Air Products and Chemicals, Inc.
7201 Hamilton Boulevard
Allentown, PA 18195-1501
(610) 481-8169

attachments: Petition for a Two Month Extension of Time
PTO Form SB/22